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1           1. A pharmaceutical composition, comprising a  
2 mixture of active compounds (A) a pharmaceutically active  
3 polypeptide, and (B) an enhancer compound which enhances the  
4 systemic absorption of said polypeptide in the lower  
5 respiratory tract of a patient, said mixture being in the  
6 form of a dry powder for inhalation, in which at least 50%  
7 of the total mass of active compounds consists of primary  
8 particles having a diameter less than or equal to about 10  
9 microns, said primary particles optionally being formed into  
10 agglomerates.

1           2. A pharmaceutical composition as claimed in claim  
2 1, additionally comprising a pharmaceutically acceptable  
3 carrier, which comprises either

4           (a) particles having a diameter of less than about  
5 10 microns, such that at least 50 % of the resultant powder  
6 consists of optionally agglomerated primary particles having  
7 a diameter of less than about 10 microns; or

8           (b) coarse particles, such that an ordered mixture  
9 is formed between the active compounds and the said carrier.

1           3. The composition of claim 1, wherein said  
2 polypeptide is a polypeptide hormone.

1           4. The composition of claim 3, wherein said hormone  
2 is vasopressin, a vasopressin analogue, desmopressin,  
3 glucagon, corticotropin (ACTH), gonadotrophin (luteinizing  
4 hormone, or LHRH), calcitonin, C-peptide of insulin,  
5 parathyroid hormone (PTH), human growth hormone (hGH),  
6 growth hormone (HG), growth hormone releasing hormone  
7 (GHRH), oxytocin, corticotropin releasing hormone (CRH),  
8 somatostatin analogs, gonadotropin agonist analogs (GnRHa),  
9 atrial natriuretic peptide (hANP), thyroxine releasing  
10 hormone (TRHrh), follicle stimulating hormone (FSH), or  
11 prolactin.

1           5. The composition of claim 1, wherein said  
2 polypeptide is a growth factor, interleukin, polypeptide  
3 vaccine, enzyme, endorphin, glycoprotein, lipoprotein, or  
4 polypeptide involved in the blood coagulation cascade, that  
5 exerts its pharmacological effect systemically.

1           6. The composition of claim 1, wherein said  
2 polypeptide has a molecular weight of less than 30 kD.

1           7. The composition of claim 1, wherein said  
2 polypeptide has a molecular weight of less than 25 kD.

1           8. The composition of claim 1, wherein said  
2 polypeptide has a molecular weight of less than 20 kD.

1           9. The composition of claim 1, wherein said  
2 polypeptide has a molecular weight of less than 15 kD.

1           10. The composition of claim 1, wherein said  
2 polypeptide has a molecular weight of less than 10 kD.

1           11. The composition of claim 1, wherein said  
2 enhancer compound is a surfactant.

1           12. The composition of claim 11, wherein said  
2 surfactant is a bile salt, a bile salt derivative, an alkyl  
3 glycoside, a cyclodextrin or derivative thereof, or a  
4 phospholipid.

1           13. The composition of claim 11, wherein said  
2 surfactant is a salt of a fatty acid.

1           14. The composition of claim 11, wherein said fatty  
2 acid has 10-14 carbon atoms.

1           15. The composition of claim 14, wherein said fatty  
2 acid is capric acid.

1           16. The composition of claim 11, wherein said  
2 surfactant is sodium caprate.

1           17. An inhaler device containing the composition of  
2 claim 1.

1           18. The inhaler device of claim 17, wherein said  
2 composition is in the form of said agglomerates, said device  
3 being configured to induce the majority of said agglomerates  
4 to break down into particles having a diameter less than or  
5 equal to about 10 microns, upon inhalation of said  
6 agglomerates from said device.

1           19. The inhaler device of claim 17, which inhaler  
2 device is a unit dose, breath actuated, dry powder inhaler for  
3 single use.

1           20. The inhaler device of claim 17, which inhaler  
2 device is a multi-dose, breath actuated, dry powder inhaler for  
3 multiple use.